

August 26, 2008

## Vitamin D Deficiency May Lurk in Babies

By RONI CARYN RABIN

Until she was 11 months old, Aleanie Remy-Marquez could have starred in an advertisement for [breast milk](#). She took to nursing easily, was breast-fed exclusively for six or seven months, and ate little else even after that. She was alert and precocious and developed at astonishing speed, her mother said, sitting at four months and walking by eight months.

But once Aleanie started putting weight on her feet, her mother noticed that her legs were curving in a bow shape below the knees. Doctors diagnosed [vitamin D-deficiency rickets](#), a softening of the bones that develops when children do not get enough vitamin D — a crucial ingredient for absorbing [calcium](#) and building bone, and the one critical hormone that breast milk often cannot provide enough of.

“I thought I was doing the best thing for her,” said Stephanie Remy-Marquez, of Hyde Park, Mass., after blood tests showed her daughter had no detectable vitamin D. [X-ray](#) images of the baby’s wrists and knees showed the edges of the bones and growth plates as blurry and fraying instead of crisp and sharp.

“Breast milk is supposed to be an entire meal, dessert and drinks included,” Ms. Remy-Marquez said. “I thought it was the ultimate cocktail.”

Aleanie’s case was unusual enough to be written up in the journal *Clinical Pediatrics* in May, but several similar reports have been published in recent years. Some experts fear that vitamin D deficiency, which can be asymptomatic, may be more common than pediatricians realize and that rickets — perceived to be a 19th-century scourge that was wiped out with the fortification of milk — may be going undetected.

Physicians have known for more than a century that exclusive [breast-feeding](#) may be associated with vitamin D deficiency and rickets, and that the condition is easily prevented and treated with inexpensive vitamin drops or cod liver oil. But doctors are reluctant to say anything that might discourage breast-feeding.

Now some researchers are also linking vitamin D deficiency with other chronic diseases like [diabetes](#), [autoimmune disorders](#) and even [cancer](#), and there have been calls to include blood tests of vitamin D levels in routine checkups.

“I completely support breast-feeding, and I think breast milk is the perfect food, and the healthiest way to nourish an infant,” said Dr. Catherine M. Gordon, director of the bone health program at Children’s Hospital Boston and an author of several studies on vitamin D deficiency, including Aleanie’s case.

“However,” Dr. Gordon continued, “we’re finding so many mothers are vitamin D deficient themselves that the milk is therefore deficient, so many babies can’t keep their levels up. They may start their lives vitamin D deficient, and then all they’re getting is vitamin D deficient breast milk.”

Some doctors and public health officials say conditions may be ripe for rickets to re-emerge: more infants are being breast-fed for extended periods, children are drinking more juice or soda and less milk, and they are spending less time exposed to sunlight, which enables the skin to synthesize vitamin D.

Children with dark skin, like Aleanie, who is African-American, appear to be at even greater risk for rickets because they do not synthesize vitamin D through the skin as easily as those with light skin.

The solution, Dr. Gordon said, is not to quit breast-feeding but to supplement breast-fed infants with vitamin drops, as recommended by the [American Academy of Pediatrics](#). The academy issued guidelines in 2003 recommending that infants be given 200 international units of vitamin D daily, and it may be increasing the recommended level soon.

But pediatricians do not consistently prescribe vitamin drops. A 2004 survey of North Carolina pediatricians found that fewer than half routinely recommended them, and one in six never recommended them.

Vitamin D deficiency may not be immediately apparent, even as it affects growth, muscle and bone mineralization, said Dr. Craig Langman, professor of kidney disease and [pediatrics](#) at Feinberg School of Medicine in Chicago.

“It sort of sneaks up on you,” he said. “So the worst scenario is the gas tank is empty and the car won’t go — you have rickets. But at very low levels of gas the car doesn’t perform very well and you start having intermittent loss of power and that sort of thing; as a result you may not be forming enough bone during childhood.”

A recent review of 14 studies, done by researchers at the National Institute of Child Health and Human Development and published in *The Archives of Pediatrics & Adolescent Medicine* in June, found that extreme vitamin D deficiency was rare in the United States, but that up to 78 percent of breast-fed babies who were not supplemented in wintertime were deficient.

Meanwhile, the number of papers describing cases of nutritional rickets in babies and young children in the United States has been accumulating over the past decade or so, from places as disparate as Alaska, Minnesota, Nevada and Texas.

The patients are more likely to be African-American and dark-skinned, and more likely to have been exclusively breast-fed for an extended period of time, without vitamin supplementation. Rates are often higher when there is less sunlight.

In a study conducted by Dr. Gordon of vitamin D levels in 365 mostly African-American and Latino infants and toddlers, 40 percent had low levels and 12 percent were deficient. Although there is a debate about what levels are considered deficient, one toddler in the study was found to have rickets, 13 children showed evidence of bone loss and 3 had bone changes consistent with rickets.

The study, published in *The Archives of Pediatrics & Adolescent Medicine* in June, found that breast-feeding without supplementation was a significant risk factor.

“Human milk is very low in vitamin D, absolutely — there is no question about that,” said Dr. Frank Greer, professor of pediatrics at [University of Wisconsin](#) School of Medicine and Public Health and chairman of the

committee on [nutrition](#) of the American Academy of Pediatrics. “Historically speaking, we probably got it from the sun, but now we’re afraid of the sun and we don’t go out as much.”

Teenagers are also at risk for vitamin D deficiency. Although their large bones protect them against rickets, they are at risk for osteopenia and even [osteoporosis](#), and may have weaker bones that are more likely to [fracture](#), said Dr. Robert Schwartz, professor of pediatrics at [Wake Forest University](#) Baptist Medical Center in Winston-Salem, N.C., who said he had observed cases of osteopenia and osteoporosis in teenagers.

“The tragedy of this is that when they’re young, they’re building up bone for the rest of their life,” Dr. Schwartz said. As people age and their bones weaken, he said: “Those who had adequate vitamin D and calcium will slide down from the top of the mountain. These kids will slide down from the middle.”

*The Well column will return next week.*

---

Copyright 2008 The New York Times Company

[Privacy Policy](#) | [Search](#) | [Corrections](#) | [RSS](#) | [First Look](#) | [Help](#) | [Contact Us](#) | [Work for Us](#) | [Site Map](#)

---